

Original Research Article

Ageism, ableism, and their intersection: Evidence from the Longitudinal Ageing Study in India wave 1

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ARTICLE INFO

Keywords:

CAD theory
Discrimination
India
Intersectional approach
LASI wave 1

ABSTRACT

Objectives: Ageism and ableism significantly affect the well-being, social inclusion, and access to resources of older adults, often shaped by socio-cultural factors, yet remain underexplored within the heterogeneous context of India. This study examines the prevalence and associated factors of ageism, ableism, and their intersection among older adults in India.

Design, setting, participants, & measurements: Utilizing data from the Longitudinal Aging Study in India (LASI) Wave 1, this study analyzed responses from 30,728 community-dwelling older adults (aged 60+) across all states and union territories. Participants were categorized into four groups: ageism, ableism, intersection, or none, based on their everyday experiences of discrimination related to age, physical disability, or both. Multinomial logistic regression identified sociodemographic factors associated with these discriminations, with the cumulative advantage/disadvantage theory serving as conceptual framework.

Results: The weighted prevalence of ageism was 10.3%, ableism was 0.5%, and 0.4% reported both. Men were more likely to report ableism (AOR 2.66) and intersectional discrimination (AOR 2.03) but less likely to report ageism (AOR 0.89). Increasing age (AOR 1.24) and lower education (AOR 1.48) were associated with ageism, while unemployment was linked to ableism (AOR 2.07) and intersectional discrimination (AOR 2.21). Notably, participants in poorer health were more likely to report ageism (AOR 1.29), ableism (AOR 3.15), and intersectional discrimination (AOR 5.14) based on the Healthy Aging Index, compared to healthier participants.

Conclusions: The findings highlight how different factors shape experiences of discrimination, underscoring the importance of adopting both individual and intersectional perspectives to effectively address these issues and design targeted interventions.

Introduction

Ageism refers to stereotypes (beliefs), prejudice (attitudes), and discrimination (behaviors) towards others or oneself based on age [1,2]. According to the World Health Organization (WHO), one in two people globally holds an ageist attitude, making it one of the most widespread forms of discrimination [3]. Understanding ageism is important, as it is associated with adverse health outcomes, contributing to reduced quality of life, an increased risk of chronic diseases, cognitive decline, social isolation, impaired recovery from illness, as well as delayed healthcare utilization [1,4]. Similarly, ableism refers to discrimination, prejudices, and social oppression toward individuals with disabilities [5]. Ableism not only affects the quality of life of individuals with disabilities but also exacerbates their social exclusion, making it

more difficult to access essential services and support. It disproportionately limits access to employment, education, and social opportunities [6]. Like ageism, ableism is also widespread, affecting over one billion individuals globally, which constitutes approximately 15% of the world's population [7].

A critical challenge in addressing ageism and ableism lies in their deep interconnection, with aging often being associated with physical, sensory, or cognitive decline, reinforcing ableist prejudices [1]. While not all older individuals experience disabilities, and not all individuals with disabilities are older adults, understanding the overlap between these two forms of discrimination (In this study, "discrimination" was used interchangeably with "-isms" per Longitudinal Ageing Study in India Wave 1 [8], but "ageism" and "ableism" were preferred to emphasize their broader scope, including behavioral, emotional, and

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<https://doi.org/10.1016/j.inpsyc.2025.100104>

Received 5 March 2025; Received in revised form 25 May 2025; Accepted 9 June 2025

Available online xxxx

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cognitive dimensions) and their distinct manifestations is critical for developing comprehensive strategies to address them. At their intersection, the compounded effects of ageism and ableism produce unique challenges, where these forms of marginalization are not merely additive but interactive and mutually reinforcing, exacerbating stigmatization, exclusion, and inequities among older adults [9]. The concept of intersectionality introduced by Crenshaw (1989) provides a valuable lens for understanding this compounded marginalization, positing that individuals with multiple marginalized identities experience discrimination in ways that cannot be understood in isolation [10]. For older adults with disabilities, this intersection results in heightened exclusion and vulnerability, creating significant barriers to social participation and access to resources [11]. Despite its importance, the concept of intersectionality remains underexplored in gerontological literature [1,12]. Understanding the intersection of ageism and ableism in Indian contexts is crucial, as it offers a particularly relevant setting to explore these interconnected forms of discrimination due to its unique demographic, socio-cultural, and infrastructural characteristics.

The Indian context: ageism, ableism and their intersection

India, the world's most populous country, is undergoing a demographic transition, with the proportion of older adults steadily increasing, making discrimination against this group particularly significant. By 2050, individuals aged 60 years and above are projected to comprise 20 % of the country's population, with older adults exceeding 315 million [13]. This demographic shift is accompanied by an increase in age-related disabilities, multimorbidity, and functional limitations, further heightening the vulnerability of older adults to discrimination [14]. The last census of India (2011) reported that approximately 26.8 million individuals live with disabilities, accounting for 2.2 % of the country's total population [15]. Bendukurthi and Raman (2019) highlighted that nearly 21 % of the total population with disability in India comprises individuals aged 60 years or above (18 % male and 23 % female), with 12 % of these older adults group experiencing multiple disabilities [16].

India's socio-cultural diversity adds complexity to the experiences of ageism and ableism, as entrenched social hierarchies based on gender, place of residence, and socio-economic status shape these discriminatory practices [17,18]. While traditional Indian culture emphasizes reverence for older adults, urbanization, economic transitions, and the increasing prevalence of nuclear families have eroded these norms, leading to a rise in discrimination towards older adults in both public and private domains [17,19]. As noted by the WHO's Global Report on Ageism, India is one of the countries with the highest prevalence of ageism, a trend that is expected to worsen as the aging population increases in size [3]. Alongside ageism, ableism in India is perpetuated by infrastructural inadequacies, weak legal frameworks, and low societal awareness [20,21]. Despite the notable prevalence of everyday discrimination in India [22], specific studies on ageism, ableism, and their intersection remain critically understudied. This gap underscores the urgent need for a comprehensive exploration of the socio-demographic as well as health-related factors that shape these forms of discrimination to better understand their implications for older adults' well-being and access to care.

Conceptual framework: the cumulated advantage/disadvantage theory

In addressing these issues, the present study adopts the cumulated advantage/disadvantage theory [23] as a conceptual framework for understanding how certain benefits or limitations experienced in life compound over time, leading to differential outcomes in later life. This theory highlights how various social, economic, and health-related advantages and disadvantages accumulate, creating a cycle of inequality that is difficult to break. In the context of older adults in India, gender, education, employment, economic status, place of residence,

and health likely plays a significant role in shaping their experiences of discrimination. Older women face compounded vulnerabilities due to gender and age-related discrimination, restricting their access to healthcare, resources, and support [24,25]. Their longer life expectancy, coupled with higher rates of functional limitations and physical disabilities, exacerbates these challenges, highlighting the need to address the impact of gender on both ageism and ableism in India [26,27]. On the other hand, men, particularly those with a history of financial independence, may benefit from better access to healthcare and social opportunities, reducing their vulnerability to some forms of discrimination in later life [28,29]. Similarly, lower levels of education can amplify the effects of discrimination, but individuals with higher educational attainment often benefit from enhanced access to healthcare, employment, and social support systems, which exacerbates their vulnerability to marginalization [17]. Education, as a critical element of the social-education-economy-health nexus [30], plays a vital role in mitigating discriminatory practices by equipping individuals with the knowledge and tools necessary to challenge systemic biases, thus enhancing their social and economic opportunities. However, age and disability discrimination in employment remains pervasive, with older adults frequently encountering systemic barriers such as biased hiring practices, restricted career opportunities for advancement, and workplace prejudices [31,32]. As employment status significantly influences social and economic inclusion, it is crucial to explore how employment and economic status interact with these forms of discrimination.

In India, geographical disparities also play a critical role, often rural areas face inadequate healthcare infrastructure and limited disability-related services, while urban areas provide advantages such as better healthcare facilities, more employment opportunities, and access to specialized service [33–35]. Understanding how these disparities influence different forms of discrimination is essential. Furthermore, physical health conditions like multimorbidity and mobility limitations, along with mental health challenges such as depression, amplify dependence and other vulnerabilities, compounding the negative effects of ageism and ableism. On the contrary, individuals with good physical and mental health often exhibit greater independence and resilience, reducing their susceptibility to discrimination and fostering a better quality of life [17,36,37]. Therefore, these multidimensional aspects emphasize the need for holistic strategies to address discrimination effectively.

Study objectives and research significance

The present study offers an opportunity to explore both individual and intersecting dimensions of ageism and ableism, highlighting the commonalities and distinctions between these issues. Drawing on the cumulative advantage/disadvantage theory [23] the present study aims to understand how various socio-demographic and health-related factors compound to shape discriminatory experiences in later life. To the best of the authors' knowledge, no prior national-level study has examined the intersection of ageism and ableism in the Indian context. This research addresses a significant gap in the literature by investigating how India's unique socio-cultural and demographic characteristics influence the prevalence of these forms of discrimination among older adults. Therefore, the primary objectives of this study are: (a) To estimate the prevalence of ageism, ableism, and their intersection among community-dwelling older adults aged 60 years and above, and (b) To identify the socio-demographic and health-related factors associated with these forms of discrimination, using large-scale, national-level data.

Methodology

Study design and participants

This study utilized secondary data from the Longitudinal Aging Study in India (LASI) wave 1, conducted between 2017 and 2018. LASI, India's first and the world's largest survey on older adults, was a

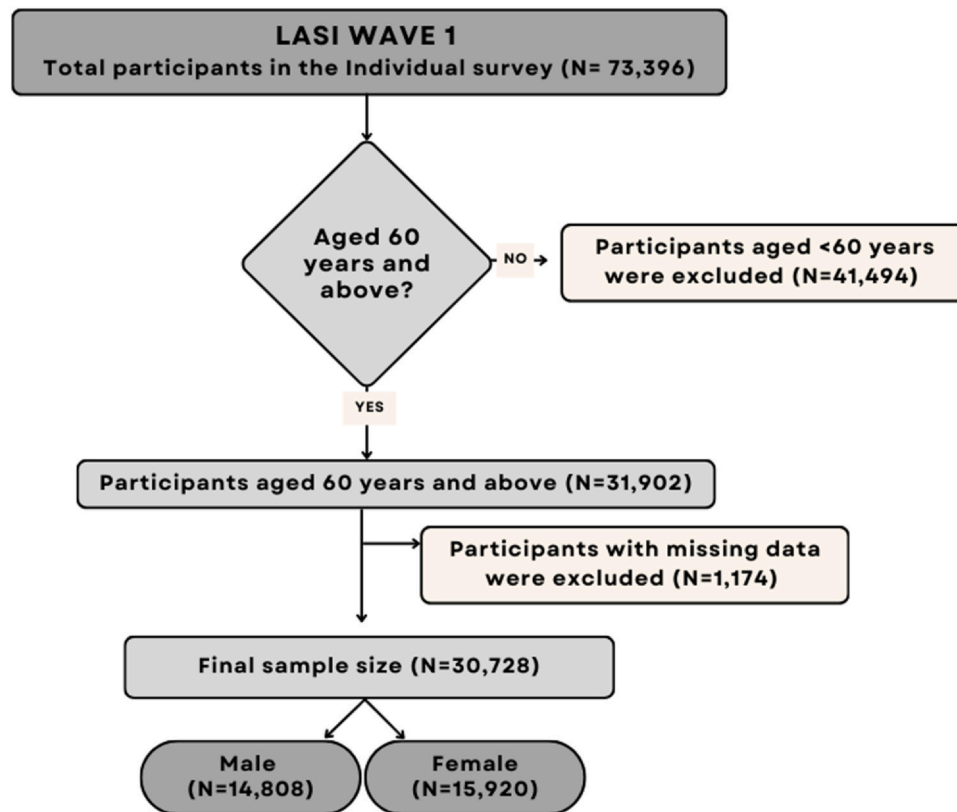


Fig. 1. Flowchart of the study sample, LASI Wave 1.

collaborative effort between the International Institute for Population Sciences (IIPS), the Harvard T. H. Chan School of Public Health (HSPH), and the University of Southern California (USC). The survey was designed to collect nationally representative data on the health, economic, and social well-being of participants aged 45 years and older, along with a sub-sample of their spouses. It achieved an individual response rate of 87.3 % during the face-to-face interview process, resulting in a sample of 73,396 participants. The survey employed a multistage stratified area probability cluster sampling design to ensure representation across 28 states and 8 union territories of India. In rural areas, a three-stage design was used: villages were selected as primary sampling units (PSUs), followed by the selection of secondary sampling units (SSUs) and households. In urban areas, a four-stage design was implemented, beginning with urban wards, division into Census Enumeration Blocks (CEBs), selection of CEBs, and then random household selection [8]. For the present study, the analysis was restricted to older adults aged 60 years and above, utilizing a total sample of 30,728 participants, comprising 14,808 males and 15,920 females (see Fig. 1). Further detailed information on the survey design is available at: <https://www.iipsindia.ac.in/lasi>.

Outcome variables

The study examined three primary outcomes related to participants' experiences of discrimination, based on responses to the LASI Wave 1 questionnaire. Participants were asked how often they encountered situations such as being treated with less courtesy or respect, receiving poorer service in public settings or healthcare, being perceived as unintelligent, being harassed, or experiencing fear or avoidance by others. They were then asked to identify the reasons for these experiences, such as age, gender, religion, caste, physical disability, finance and more. Reports of age-based discrimination were categorized as 'ageism,' while those of physical disability-based discrimination were classified as 'ableism.' The intersection of ageism and ableism was identified when

participants reported experiencing both age-based and physical disability-based discrimination simultaneously. Based on their responses, participants were categorized into four groups: "ageism," "ableism," "intersection," or "none," enabling a clear understanding of the individual prevalence and overlap of these forms of discrimination.

Explanatory variables

The explanatory variables included socio-demographic and health factors. Socio-demographic variables comprise age, gender, residence, educational attainment, employment and economic status. Age was categorized into three groups: 60–69 years, 70–79 years, and 80 years and above. Gender was dichotomized as male and female, consistent with the LASI dataset, which employs this binary classification [8]. Educational attainment was grouped into three levels: less than primary education, primary education, secondary education and higher education. Current employment status was categorized into two groups: yes, those participants currently engaged in paid or self-employment, and no, those no longer currently employed. Economic status was determined using the Monthly Per Capita Consumption Expenditure (MPCE), calculated from household data on food and non-food expenditures [8]. Participants were then classified into quintiles based on MPCE, ranging from the poorest to the richest. In the present study, health status was assessed using the Healthy Aging Index (HAI), which incorporates multiple health domains including physiological and metabolic health (hypertension, diabetes, lung disease, heart disease, arthritis, neurological/psychiatric problem, high cholesterol, thyroid, and other chronic disease), physical capabilities (6 ADLs and 7 IADLs), self-reported health status, cognitive function (data orientation and recall test), and psychological well-being (depression) [38]. The reliability of the HAI scale was evaluated using Cronbach's Alpha, yielding a value of 0.802, indicating good internal consistency. For the present study analysis, the continuous HAI score was divided into tertiles and categorized as "less healthy," "intermediate," and "healthier" [39].

Table 1

Participants characteristics, LASI wave 1.

Characteristics		N = 30, 728	Unweighted %	Weighted %
Age group	60 – 69	18786	61.1	59.6
	70 – 79	8875	28.9	29.9
	80 +	3067	10.0	10.6
Gender	Male	14808	48.2	47.4
	Female	15920	51.8	52.6
Residence	Rural	20268	66.0	70.8
	Urban	10460	34.0	29.2
Region*	North	5637	18.3	12.8
	Central	4139	13.5	21.1
	East and NE	9465	30.8	26.6
	West	4166	13.6	17.1
	South	7321	23.8	22.4
Educational status	< Primary	20115	65.5	67.9
	Primary	5914	19.2	18.0
	≥ Secondary	4699	15.3	14.1
Economic status	Poorest	6290	20.5	21.7
	Poor	6321	20.6	21.7
	Middle	6269	20.4	20.7
	Richer	6054	19.7	19.4
	Richest	5794	18.9	16.5
Employment status	Yes	9192	29.9	31.5
	No	21536	70.1	68.5
Healthy status	Less healthy	17925	58.3	62.5
	Intermediate	8285	27.0	25.0
	Healthier	4518	14.7	12.5
Discrimination type	Ageism	2920	9.5	10.3
	Ableism	144	0.5	0.5
	Intersection	101	0.3	0.4
	None	27563	89.7	88.9

* The regional classification includes the following states and union territories — North: Jammu and Kashmir, Himachal Pradesh, Punjab, Chandigarh, Uttarakhand, Haryana, Delhi, Rajasthan; Central: Uttar Pradesh, Chhattisgarh, Madhya Pradesh; East: Bihar, West Bengal, Jharkhand, Odisha; Northeast: Sikkim, Arunachal Pradesh, Nagaland, Manipur, Mizoram, Tripura, Meghalaya, Assam; West: Gujarat, Daman and Diu, Dadra and Nagar Haveli, Maharashtra, Goa; South: Andhra Pradesh, Karnataka, Lakshadweep, Kerala, Tamil Nadu, Pondicherry, Andaman and Nicobar, Telangana.

Statistical analysis

Analyses were completed with using R statistical packages version 4.3.3 (<https://www.r-project.org>), with two-tailed p-values of < 0.05 considered statistically significant. The study followed STROBE guidelines (<https://www.strobe-statement.org>). First, any experiences with perceived ageism and ableism were assessed. Second, descriptive statistics were used to calculate both weighted and unweighted prevalence estimates of ageism, ableism, and their intersection, stratified by socio-demographic characteristics. National-level sampling weights were applied to produce weighted prevalence estimates, ensuring representativeness of the Indian older adult population. Differences between groups were tested using bivariate analyses with chi-square tests (χ^2). These tests provided an initial understanding of associations between explanatory variables and the outcome categories. Thirdly, before conducting multivariate (regression) analyses, we evaluated multicollinearity associations among exploratory variables (Appendix A.1) using the Variance Inflation Factor (VIF) test. The results reveal no instances of multicollinearity, as all VIF values for predictor variables are below 2. Consequently, all significant predictor variables are retained for subsequent statistical tests. Lastly, to examine the association, a multivariate analysis using multinomial logistic regression (backward stepwise) model was applied to identify factors associated with ageism, ableism, and their intersection. The multinomial logistic regression model used the formula:

$$\log \frac{P(Y_i)}{P(Y_0)} = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \dots + \beta_k X_k$$

where Y_i represents the categories of ageism, ableism, or intersection; Y_0 is the reference category (none/no discrimination); X_k represents the explanatory variables; and β_k denotes the regression coefficients. State (geographical region) was included as a fixed effect in the

multinomial logistic regression models to adjust for state-level variation. Adjusted odds ratios (AORs) with 95 % confidence intervals (CIs) were reported to indicate the strength and direction of associations.

Ethical considerations

The LASI Wave 1 received ethical approval from the Indian Council of Medical Research (ICMR), India, and adhered to all relevant ethical guidelines and regulations. Informed consent was obtained from all participants prior to data collection. The LASI dataset used in this study is publicly accessible through the IIPS, Mumbai, which conducted the survey on behalf of the Ministry of Health and Family Welfare, Government of India. For the present study, access to the LASI dataset was granted through a formal data permission request (Data Request No. RQ00001198, dated 02.12.2024). Researchers and policymakers interested in accessing the LASI Wave 1 data can submit requests to IIPS through the official repository available at <https://www.iipsindia.ac.in/content/LASI-data>.

Results

Participants characteristics

The sample comprised 30,728 older adults aged 60 years and above from LASI Wave 1, with 52.6 % were women (see Table 1). Most participants were aged 60–69 years (59.6 %), resided in rural areas (70.8 %), and had less than primary education (67.9 %). Participants were distributed across all regions of India, 12.8 % were from the North, 21.1 % from the Central region, 26.6 % from the East and Northeast (NE), 17.1 % from the West, and 22.4 % from the South. In terms of economic status, 21.7 % of participants fell into the poor and poorest categories each, while 16.5 % were categorized as the richest.

Table 2

Ageism, ableism and their intersection by sociodemographic characteristics.

Characteristics		Discrimination type (weighted %)				χ^2 test p-value
		Ageism	Ableism	Intersection	None	
Age group	60–69	9.7	0.5	0.2	89.5	< 0.01
	70–79	10.7	0.6	0.5	88.2	
	80+	12.3	0.2	0.6	86.9	
Gender	Male	9.7	0.6	0.4	89.3	< 0.01
	Female	10.9	0.4	0.3	88.5	
Residence	Rural	11.3	0.6	0.4	87.8	< 0.01
	Urban	7.8	0.3	0.4	91.5	
Educational status	< Primary	11.7	0.5	0.4	87.4	< 0.01
	Primary	8.0	0.5	0.3	91.2	
	≥ Secondary	6.5	0.3	0.3	92.9	
Economic status	Poorest	12.5	0.6	0.5	86.5	< 0.01
	Poor	10.5	0.6	0.3	88.6	
	Middle	9.1	0.4	0.3	90.2	
	Richer	9.9	0.3	0.4	89.5	
	Richest	9.2	0.5	0.4	89.9	
Employment status	Yes	10.3	0.3	0.2	89.2	< 0.01
	No	10.3	0.5	0.5	88.7	
Health status	Less healthy	11.2	0.6	0.5	87.7	< 0.01
	Intermediate	8.8	0.2	0.1	90.9	
	Healthier	9.1	0.3	0.1	90.5	

The employment status indicated that 68.5 % were currently not employed. Regarding health, 62.5 % were categorized as less healthy, 25.0 % as intermediate, and 12.5 % as healthier. Overall, 10.3 % reported experiencing ageism, 0.5 % ableism, and 0.4 % experienced both, while the majority (88.9 %) reported no discrimination.

Ageism, ableism and their intersection by sociodemographic characteristics

In Table 2, the prevalence of ageism increased with age, from 9.7 % in the 60–69 age group to 12.3 % in those aged 80 and older ($p < 0.01$). Women (10.9 %) reported slightly higher levels of ageism compared to men (9.7 %), while ableism was marginally higher among men (0.6 %) than women (0.4 %). Rural residents experienced higher rates of both ageism (11.3 %), and ableism (0.6 %) compared to their urban counterparts (7.8 % and 0.3 %, respectively; $p < 0.01$). Lower educational attainment was higher among those who reported ageism, with 11.7 % of those with less than primary education experiencing it compared to 6.5 % of those with secondary education or higher. Economic status revealed similar trends, with the poorest quintile reporting the highest ageism prevalence (12.5 %; $p < 0.01$). Current employment status also showed association with experiences of discrimination, as those currently not employed reported higher rates of ableism (10.5 %) compared to those employed (0.3 %). Finally, participants categorized as less healthy reported the highest prevalence of ageism (11.2 %), ableism (0.6 %), and their intersection (0.5 %) compared to healthier participants ($p < 0.01$).

Factors associated with perceived discrimination: ageism, ableism, and their intersection.

The analyses from LASI Wave 1 reveal significant associations between ageism, ableism, their intersection, and socio-demographic characteristics (see Table 3). Older adults aged 70–79 years and 80 years or older had higher odds of reporting ageism compared to those aged 60–69 years (AOR, 1.18 [95 % CI, 1.08–1.29] and 1.27 [95 % CI, 1.08–1.41], respectively). Interestingly, the odds of experiencing ableism decreased with age, with participants aged 80+ years having significantly lower odds (AOR, 0.55; 95 % CI, 0.29–0.98). However, no association was observed between the intersection and age group. Gender differences revealed no significant association with ageism (AOR, 0.99; 95 % CI, 0.90–1.08), but men had significantly higher odds

of reporting ableism (AOR, 2.63; 95 % CI, 1.83–3.78) and intersectional discrimination (AOR, 2.08; 95 % CI, 1.36–3.17) compared to women. Rural residents were more likely to experience ageism (AOR, 1.26; 95 % CI, 1.14–1.39) and ableism (AOR, 1.74; 95 % CI, 1.14–2.67) than their urban counterparts, although rural residence had no significant association with intersectional discrimination. Educational attainment was inversely related to ageism. Participants with less than primary education had 1.44 times higher odds of reporting ageism (AOR, 1.44; 95 % CI, 1.25–1.66) than those with secondary or higher education. Primary-level education was also significantly associated with ageism (AOR, 1.23; 95 % CI, 1.05–1.44). However, neither level showed significant associations with ableism or intersectional discrimination. Employment status influenced perceived discrimination. Those currently not employed had higher odds of experiencing ableism (AOR, 2.15; 95 % CI, 1.39–3.34) and intersectional discrimination (AOR, 2.21; 95 % CI, 1.23–3.98), though not ageism. Health was a significant determinant of discrimination. Participants categorized as less healthy had 1.39 times higher odds of experiencing ageism (AOR, 1.39; 95 % CI, 1.22–1.58), 3.09 times higher odds of ableism (AOR, 3.09; 95 % CI, 1.57–6.09), and over 5 times higher odds of intersectional discrimination (AOR, 5.05; 95 % CI, 1.79–14.22) compared to healthier participants. Economic status was initially included in the model but was excluded following backward stepwise regression. Unadjusted odds ratios for these associations are provided on appendix A.2 for further validation of the results.

In Fig. 2, the heatmap offers a clear visual representation of the associations between various factors (age, gender, residence, education, employment, health) and perceived discrimination types (ageism, ableism, and their intersection), with color intensity indicating the strength of these relationships. Darker colors highlight stronger associations, making it easier to identify key patterns, such as which sociodemographic groups are more likely to experience specific types of discrimination. This visual tool complements the adjusted odds ratio table (see Table 3) by summarizing the data and helping to quickly spot trends, while the table provides the detailed statistical values (AORs and 95 % CIs) to quantify and validate these patterns.

Discussion

This study utilized a nationally representative dataset from LASI Wave 1, encompassing 30,728 older adults aged 60 years and above

Table 3
Adjusted odds ratios for ageism, ableism and their intersection.

Characteristics		Discrimination type (Reference: None/No discrimination)		
		Ageism AOR (95 % CI)	Ableism AOR (95 % CI)	Intersection AOR (95 % CI)
Age group	60 – 69®			
	70 – 79	1.179 (1.078 – 1.290)*	0.990 (0.687 – 1.425)	1.368 (0.876 – 2.793)
	80 +	1.265 (1.078 – 1.411)*	0.545 (0.286 – 0.984)**	1.585 (0.900 – 2.793)
Gender	Female®			
	Male	0.986 (0.903 – 1.077)	2.631 (1.831 – 3.783)*	2.076 (1.360 – 3.168)*
Residence	Urban®			
	Rural	1.255 (1.135 – 1.387)*	1.742 (1.136 – 2.671)**	1.420 (0.864 – 2.332)
Educational status	≥ Secondary®			
	< Primary	1.439 (1.249 – 1.659)*	1.326 (0.738 – 2.382)	1.432 (0.711 – 2.885)
	Primary	1.230 (1.052 – 1.439)*	1.385 (0.735 – 2.610)	1.080 (0.484 – 2.411)
Employment status	Yes®			
	No	1.060 (0.962 – 1.169)	2.151 (1.386 – 3.339)	2.212 (1.231 – 3.977)
Health status	Healthier®			
	Less healthy	1.387 (1.216 – 1.582)*	3.093 (1.570 – 6.090)*	5.045 (1.791 – 14.218)*
	Intermediate	1.107 (0.883 – 1.171)	0.622 (0.267 – 1.451)	1.042 (0.311 – 3.487)

AOR Odds Ratio adjusted for all the covariates in the study, CI Confidence Interval

* $p < 0.01$,

** $p < 0.05$; ®- Reference category

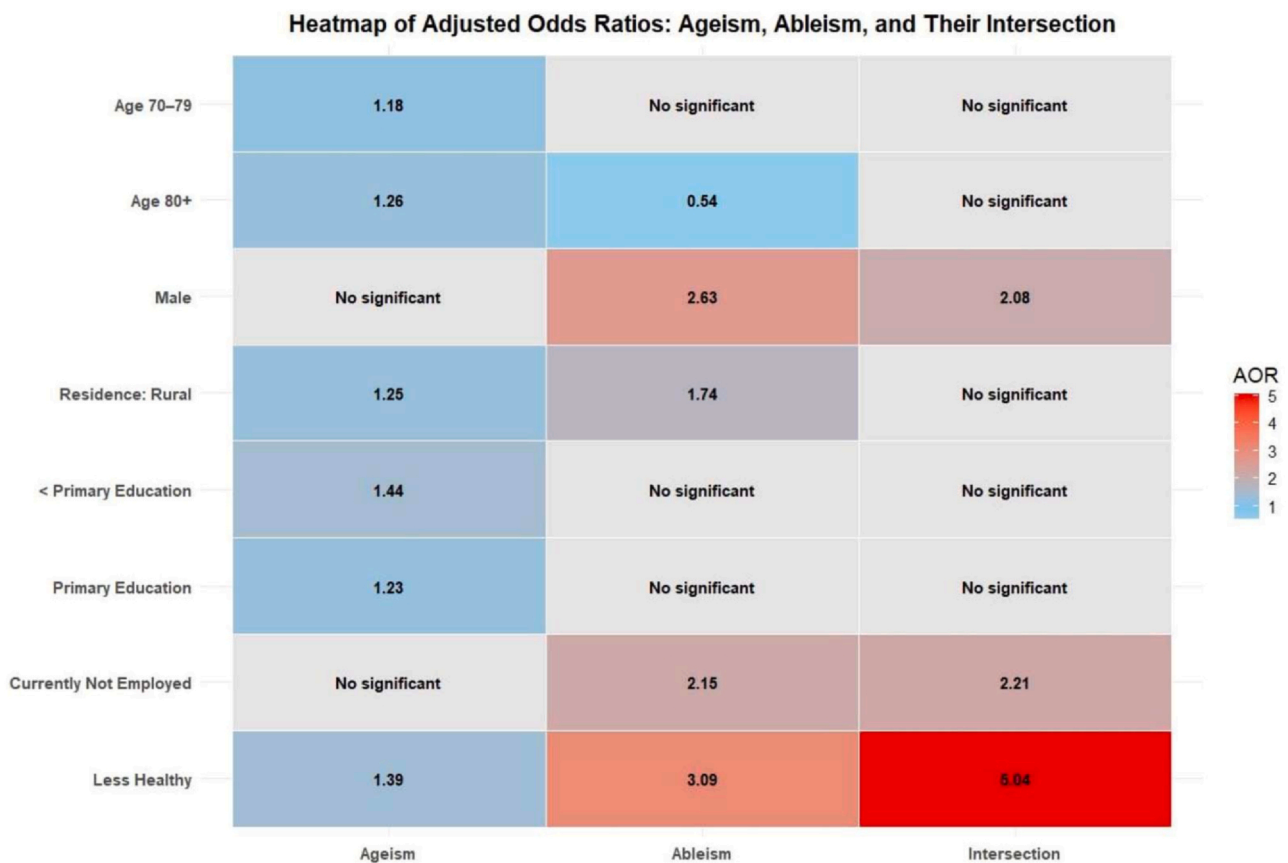
across 28 states and 8 Union Territories, to investigate the prevalence and associated factors of perceived ageism, ableism, and their intersection. The findings highlight significant patterns and associations, revealing disparities across demographic, geographic, and health dimensions that underscore the compounded vulnerabilities faced by community-dwelling older adults.

The overall prevalence of ageism was 10.3 %, ableism was 0.5 %, and their intersection was 0.4 %. Although ageism among older adults has been relatively well-documented in the Indian context [3,17], ableism remains an underexplored domain and continues to be substantially underreported in both research and public discourse. This lower reporting of ableism may reflect a lack of societal awareness regarding disability-related discrimination in India, where traditional narratives often overlook the unique challenges faced by individuals with disabilities [20]. Additionally, physical limitations, which may arise from disabilities, are often misconstrued as a natural part of aging [1], leading to their misclassification as ageism rather than recognition as ableism. This conflation obscures the distinct nature of disability-related discrimination, further contributing to its underreporting. However, the higher prevalence of ageism compared to ableism in the present study is consistent with prior research, which indicates that age-based stereotypes and biases are pervasive and better recognized [3]. Furthermore, the prevalence of ageism in India remains lower than that reported in studies based on the United States Health and Retirement Study (HRS), which found a rate of 29.1 %, and the English Longitudinal Study of Ageing (ELSA), which reported 34.8 %, where age-based discrimination tends to be more prominently documented [40]. This disparity may be attributed to cultural factors, such as strong familial support systems and collective societal values that emphasize respect for older adults, as well as differences in awareness and reporting mechanisms for discrimination. Further exploration of these contextual factors is essential to better understand the dynamics of ageism and ableism in diverse settings.

The cumulative advantage/disadvantage theory provides a robust framework for understanding the associated factors of ageism, ableism,

and their intersection [23]. Gender, for instance, plays a significant role in influencing these experiences. Our study findings indicate that men faced a strong association with ableism and intersectional discrimination, while ageism showed no gender difference. These gendered differences may be explained by societal biases, gendered expectations, and cultural norms, which shape perceptions of discrimination [24,25]. Traditional gender roles often ascribe caregiving and familial responsibilities to women [41], potentially protecting them from overt discrimination in some settings. However, these same roles may also reinforce ageism [17], as women's perceived value diminishes with age due to societal emphasis on youth and beauty. Men, on the other hand, may experience higher levels of ableism and intersectional discrimination due to societal expectations that they remain economically active and physically capable throughout their lives [42]. Similarly, the present study found that older adults in the “older old” group are more prone to ageism, although they are less likely to report ableism. From the perspective of the social clock framework proposed by Neugarten and colleagues (1965), aging follows culturally defined timelines that structure individuals' expectations and social experiences [43]. In this context, aging itself is an ‘on-time’ event, making age-related biases more socially salient. In contrast, disability in later life may be perceived as a natural consequence of aging rather than an ‘off-time’ event, which could reduce its recognition as a distinct form of discrimination. This underscores how advancing age can simultaneously serve as a protective factor against certain forms of discrimination while exacerbating others, highlighting the complex interplay between age and disability in older populations.

Educational status showed a significant association with ageism but not with ableism or intersectional discrimination. While individuals with higher education often benefit from better access to healthcare, employment, and social support, those with lower education levels may face increased vulnerability to ageism due to fewer economic opportunities and greater dependence on social and familial networks [17,30]. However, the lack of association between education and ableism suggests that disability-related discrimination may be



Footnote: The heatmap presents adjusted odds ratios (AOR) for the association between sociodemographic characteristics and different types of discrimination (Ageism, Ableism and Intersection), based on LASI Wave 1 data. 'None/No discrimination' serves as the reference group. AOR values greater or less than 1 are highlighted in bold to indicate statistical significance. For 95% confidence intervals, refer to Table 3.

Fig. 2. Heatmap illustrating adjusted odds ratios for the association between discrimination types and sociodemographic characteristics, LASI Wave 1.

influenced by factors beyond individual education levels, such as societal attitudes and systemic barriers [5,6]. Employment status was associated with ableism and intersectional discrimination, with older adults who were not employed reporting higher levels of both, but no such association was found with ageism. This pattern underscores the role of employment in fostering social inclusion and economic independence, which can reduce experiences of ableism and intersectional discrimination by providing opportunities for greater social participation and financial stability [6,44]. However, ageism may not show the same association with employment, as societal perceptions often already align aging with retirement and a reduced expectation of workforce participation [45,46], thus limiting the potential impact of employment status on age-related discrimination. Furthermore, Chasteen and colleagues (2021) also suggest that older adults are less likely to report ageism in employment compared to younger individuals [47], which may explain the lack of a significant association between employment status and ageism in this study.

Discrimination was more prevalent among rural residents than urban residents. In India, where more than 71 % of older adults live in rural areas [48], the higher prevalence of ageism and ableism reflects the compounded vulnerabilities faced by older adults in these settings, including limited access to healthcare, education, and social services [33–35]. This rural-urban disparity highlights the critical need for targeted policies and interventions to address discrimination and awareness among rural populations. Lastly, health status emerged as a critical determinant of discrimination, with less healthy individuals being more likely to report ageism, ableism, and intersectional

discrimination. Poor health amplifies dependence and vulnerability, making individuals more susceptible to discriminatory practices [17,36,37]. The compounded nature of these vulnerabilities is most pronounced in intersectional discrimination, where systemic inequities related to age and disability mutually reinforce exclusion. These findings similarly support the cumulative advantage/disadvantage theory [23], which posits that health-related effects can lead to heightened susceptibility to discrimination. Similar trends have been documented in global studies, emphasizing the critical need for inclusive healthcare policies that address both physical and psychosocial dimensions of health [49–51]. Therefore, this study provides a nuanced lens through which multiple forms of marginalization, such as ageism and ableism, intersect to produce unique and compounded disadvantages. This study underscores the importance of addressing systemic inequities in an individual as well as holistic manner, recognizing that individuals do not experience discrimination in isolation but as an interplay of multiple factors.

The study provides critical insights into the compounded nature of discrimination experienced by older adults in India, with significant implications for policy and practice informed by the strength of observed associations: (a) The strong association between male gender and ableism and intersectional discrimination underscore the need for gender-sensitive policies, recognizing that vulnerabilities may not always disproportionately affect women. Targeted programs should support men in navigating disability-related challenges while also empowering women to overcome age-based biases; (b) The very strong association between poor health and intersectional discrimination—the

largest effect size in our analysis—demands the critical need for integrating assistive devices, rehabilitation services, and mental health support into healthcare frameworks to reduce these disparities; (d) Despite low reported rates of ableism, the strong association with health and rural residence signals underreporting. Public awareness campaigns to challenge ageist and ableist attitudes are essential for promoting inclusivity among older adults as well as younger generations to foster intergenerational solidarity; and (e) The moderate-to-strong associations between unemployment and ableism or intersectional discrimination highlight the need for tailored employment support such as flexible retirement age, can enhance social and economic inclusion, reducing vulnerabilities to discrimination towards older adults with physical limitations.

This study has several limitations. First, the use of cross-sectional data from LASI Wave 1 (with only one wave of data currently available) limits the ability to establish cause-effect relationships between variables. Longitudinal data would provide deeper insights into the temporal dynamics of perceived discrimination. Second, the relatively small sample size for ableism-related discrimination may have influenced the robustness of the findings, potentially underestimating the true prevalence and associations. Third, self-reported measures of discrimination are susceptible to social desirability and recall biases, which may have affected the accuracy of the reported experiences. Fourth, due to the absence of publicly available identifiers for primary sampling units and strata in the LASI dataset [52], we were unable to fully account for the complex multistage stratified cluster sampling design in variance estimation. While state was included as a fixed effect to partially adjust for geographic clustering, this limitation may have affected the precision of standard errors, confidence intervals, and p-values. Despite these limitations, studying has notable strengths. Its methodological rigor and comprehensive analytical approach ensure the validity of the key findings. The study contributes to gerontological literature by identifying important gaps and patterns in the understanding of intersectional discrimination among older adults. Future research should prioritize longitudinal studies to explore the temporal patterns and causal pathways underlying perceived discrimination. Additionally, qualitative research methods, such as in-depth interviews and focus group discussions, could provide nuanced insights into the lived experiences of marginalized populations, enriching the quantitative findings. Future studies should consider including younger populations to better understand the intergenerational roots and perpetuation of age-based discrimination.

CRedit authorship contribution statement

Liat Ayalon: Writing – review & editing, Funding acquisition, Conceptualization. **Sayani Das:** Writing – review & editing, Writing – original draft, Methodology, Formal analysis, Data curation.

Funding

None.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Acknowledgements

Authors acknowledge the role of the International Institute for Population Sciences (IIPS) website for providing secondary data with a request for use in research purposes only.

Appendix A. Supporting information

Supplementary data associated with this article can be found in the online version at doi:10.1016/j.inpsyc.2025.100104.

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